

Effectiveness of Hyperbaric Oxygen Therapy in the Treatment of Complex Regional Pain Syndrome

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In this double-blind, randomized, placebo-controlled study we aimed to assess the effectiveness of hyperbaric oxygen (HBO) therapy for treating patients with complex regional pain syndrome (CRPS). Of the 71 patients, 37 were allocated to the HBO group and 34 to the control (normal air) group. Both groups received 15 therapy sessions in a hyperbaric chamber. Pain, oedema and range of motion (ROM) of the wrist were evaluated before treatment,

after the 15th treatment session and on day 45. In the HBO group there was a significant decrease in pain and oedema and a significant increase in the ROM of the wrist. When we compared the two groups, the HBO group had significantly better results with the exception of wrist extension. In conclusion, HBO is an effective and well-tolerated method for decreasing pain and oedema and increasing the ROM in patients with CRPS.

KEY WORDS: COMPLEX REGIONAL PAIN SYNDROME; HYPERBARIC OXYGEN THERAPY; REFLEX SYMPATHETIC DYSTROPHY; RANGE OF MOTION; PAIN; OEDEMA

Introduction

Severe local pains in the extremities, skin colour changes, hypo- or hyperhydrosis and localized osteoporosis characterize complex regional pain syndrome (CRPS). Since its original description by Mitchell in 1864, CRPS, previously known as reflex sympathetic dystrophy, has been a poorly understood and frequently overlooked condition¹ and its aetiology remains unclear. Trauma, which is often mild, is the main aetiological factor but not the only one.² Moreover, there is no relationship between the severity of trauma and the severity of the

syndrome.³ The pathogenetic universally accepted mechanism proposed by Leriche is sympathetic-reflex imbalance.⁴ A factor contributing to many chronic pain syndromes is overactivity of the sympathetic nervous system. The patient's pain is usually diffuse and does not correspond to a dermatome or peripheral nerve distribution.⁵

The clinical symptoms of CRPS arise from the sensory, motor and sympathetic nervous systems. Early diagnosis influences the response to treatment and the evolution of the disease. There are three stages in the development of CRPS: acute (stage I), dystrophic (stage II) and atrophic (stage III).